thermocouple junction so that the cold thermocouple junction remains on the substrate.

**8**. A batch process method of manufacture of convective accelerometer and tilt sensor devices, said method comprising:

providing an integrated circuit chip comprising a substrate having an integrated circuit pattern thereon comprising a plurality of separate sub-patterns each comprising a heater element and at least first and second thermocouple elements located on opposite sides of said heater element and further defining etching sites on said substrate; and

using a maskless etching step to provide simultaneous etching of the substrate at the etching sites of all of the sub-patterns so as to etch away portions of the substrate around and under the heater and thermocouple elements of each sub-pattern to form a cavity therebeneath and to thereby suspend said elements of each sub-pattern so as to thermally isolate said elements from the substrate and so that an air gap contiguous with said cavity is formed between each said heater element and each of the respective said first and second thermocouple elements.

**9**. A method of manufacture according to claim **8** wherein said heater element of each sub-pattem includes a plurality of heaters arranged in a symmetrical pattern and wherein a thermocouple element is associated with each of said heaters.

**10**. A method of manufacture according to claim **9** wherein said plurality of heaters comprises four heaters arranged in a square configuration and wherein a thermocouple element is arranged opposite to each of said four heaters outwardly thereof.

**11**. A method of manufacture according to claim **8** wherein said heater element of each sub-pattern comprises a single heater and said etching of the substrate comprises using a gaseous isotropic etchant to perform said etching.

**12**. A method of manufacture according to claim **11** wherein the gaseous isotropic etchant comprises xenon-difluoride.

**13**. A method of manufacture according to claim **8** wherein said etching of said substrate comprises using an anisotropic etchant to perform said etching.

**14**. A method of manufacture according to claim **8** wherein the thermocouple elements of each sub-pattem include hot and cold thermocouple junctions and the substrate is etched up to the cold thermocouple junction so that the cold thermocouple junction remains on the substrate.

**15**. A method of manufacture according to claim **1** wherein the sensor device formed by the etching step is sealed within an enclosure so that when an acceleration is applied to the device, the inertia of air in the enclosure creates a temperature difference on opposite sides of said heater element.

**16**. A method of manufacture of a convective accelerometer and tilt sensor device, said method comprising:

providing an integrated circuit chip comprising a substrate having an integrated circuit pattern thereon including a heater element located centrally of said substrate and at least first and second thermocouple elements located on said substrate on opposite sides of said heater element; and

etching away portions of the substrate surrounding and beneath the heater and thermocouple elements to suspend said element on said substrate so as to thermally isolate said elements from the substrate,

said thermocouple elements including hot and cold thermocouple junctions and the substrate being etched up to the cold thermocouple junctions so that the cold thermocouple junctions remains on the substrate.

* * * * *